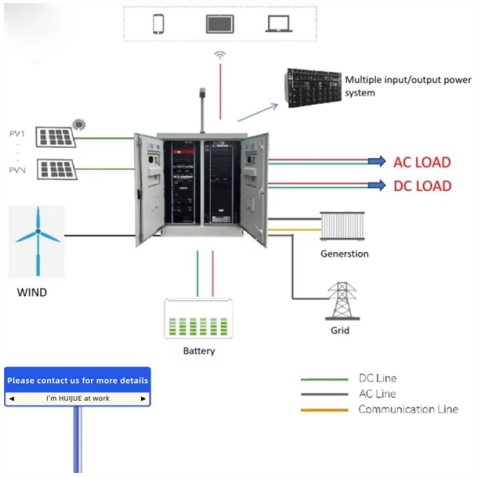
Surface Plasma Fiber Optic Sensing



Overview

Optical fiber sensors based on surface plasma technology have many unique advantages in specific applications such as extreme environmental monitoring, physical parameter determination, and biomedical indicators testing. In recent decades, various kinds of fiber probes with special structures were. This study reports the development of a fiber-optic localized surface plasmon resonance (FO-LSPR) sensor incorporating a three-dimensional micropillar array functionalized with gold nanoparticles. The micropillar structures were fabricated on the fiber facet using a single-mask imprint lithography. Surface Plasmon is combined electrons oscillation that happens at the interfaces among metals with dielectrics, resultant in generate surfaces Plasmon polarities on excitations through lights. In fact, SPR optical fiber biosensors are becoming very.

Article Content

Novel Optical Fiber-Based Structures for Plasmonics Sensors

Optical fiber sensors based on surface plasma technology have many unique advantages in specific applications such as extreme environmental monitoring, physical parameter

Recent advances of optical fiber biosensors based on surface

The sensing principles of optical fiber-based SPR sensors are introduced, and different optical fiber-based SPR biosensors are described. Finally, the present challenges and prospects are discussed.

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MoTe2-enhanced optical fiber surface plasmon resonance sensor ...

This study proposes a MoTe 2 -enhanced optical fiber surface plasmon resonance (SPR) sensor with microfluidic technology, achieving high sensitivity and continuous measurement.

Fabrication and Measurement of Fiber Optic Sensor Based on ...

This study reports the development of a fiber-optic localized surface plasmon resonance (FO-LSPR) sensor incorporating a three-dimensional micropillar array functionalized with gold

Optical Fiber Sensors Based on Surface Plasmon Resonance: A ...

Classically, the LSPRs'' sensing performance could be efficiently realized by using diverse types of optical fiber, optimizing the geometric structures of fiber probes, and adopting diverse optical

Photonic Crystal Fiber Sensor Based on Surface Plasmon ...

An ultra-sensitive photonic crystal optical fiber sensor based on surface plasmon resonance (SPR) is designed and analyzed. The D-shaped optical fiber is symmetrically coated with

Tamm-surface plasmon resonances from nanograting

Simultaneous observation of Tamm plasmon (TP) and surface plasmon (SP) resonances has attracted much attention to improve the sensing

High-resolution fiber optic surface plasmon resonance sensor for ...

This paper presents a modified design of a high-resolution fiber optic sensor that operates on the surface plasmon resonance effect. The sensor is based on the well-known method

Plasma-Based Deposition and Processing Techniques for Optical Fiber Sensing

Many interesting optical fiber sensing devices can be fabricated using plasma-based deposition and surface processing of thin films . Following section reviews the range of plasma

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Review of Fiber-Optic Localized Surface Plasmon Resonance Sensors ...

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Localized surface plasmon resonance (LSPR) biosensors, which enable nanoscale confinement and manipulation of light, offer the enhanced sensitivity and electromagnetic energy localization. The

Fiber-Optic Surface Plasmon Resonance Sensors and Biochemical ...

Fiber-optic (FO) surface plasmon resonance (SPR) sensors can be used as label-free and highly sensitive tools for biosensing. They have been widely applied in fields of environmental

Surface Plasmon Resonance-Based Fiber Optic Sensors: Principle,

Surface plasmon resonance technique in collaboration with optical fiber technology has brought tremendous advancements in sensing of various physical, chemical, and biochemical

Graphene based fiber optic surface plasmon resonance for bio

Abstract In this study, a surface plasmon resonance (SPR) based fiber optic sensor coated with graphene is introduced. A graphene film synthesized by thermal chemical vapor deposition

Highly sensitive fiber optic surface plasmon resonance sensor

Optical fiber-based surface plasmon resonance sensors using, silver layer (Ag), platinum (Pt), and indium tin oxide in addition to 2D nanomaterials such as graphene are presented in this

In-line fiber-optic sensors based on the excitation of surface plasma ...

Optical excitation of surface plasmon waves (SPW''s) has been used for more than one decade to develop a number of sensors. In 1982, the surface plasmon resonance technique was

Photonics

Photonics Spectra is a global photonics resource and magazine with news, products, research, and applications covering optics, lasers, imaging, and sensing.

Novel spectral fiber optic sensor based on surface plasmon resonance

A novel fiber optic surface plasmon resonance (SPR) sensing device based on spectral interrogation of SPR in a miniature fiber optic sensing element using depolarized light is reported.

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